



Supplement of

Occurrence and growth of sub-50 nm aerosol particles in the Amazonian boundary layer

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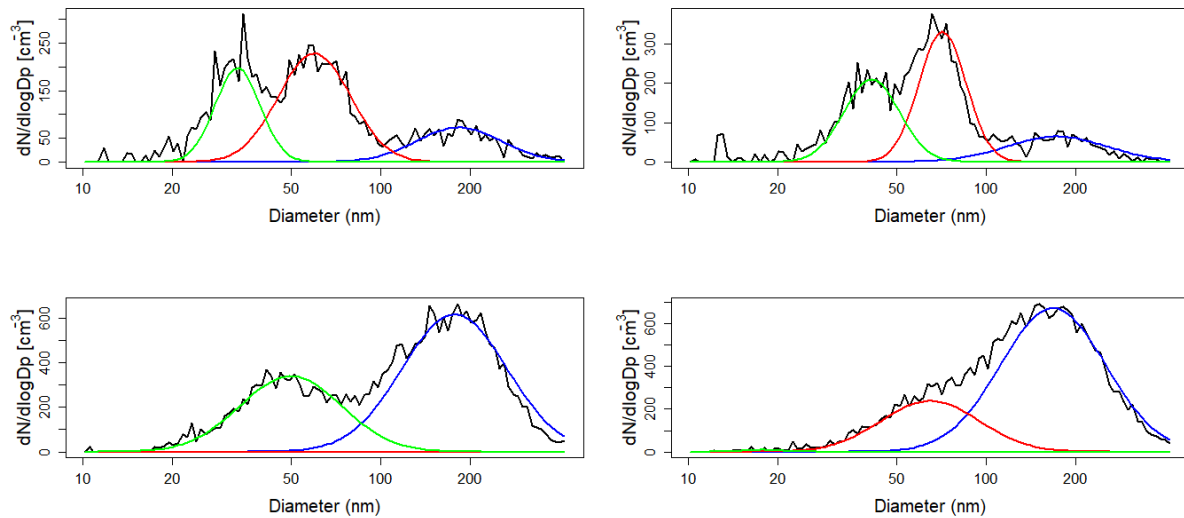


Figure S1. Examples of multi-modal log-normal fits obtained by the automatic algorithm. Sub-50 nm size particle mode (green) is defined as $10 \leq D_p < 50$, Aitken mode (red) is defined as $50 \leq D_p < 100$, and accumulation mode (blue) is defined as $100 \leq D_p \leq 400$.

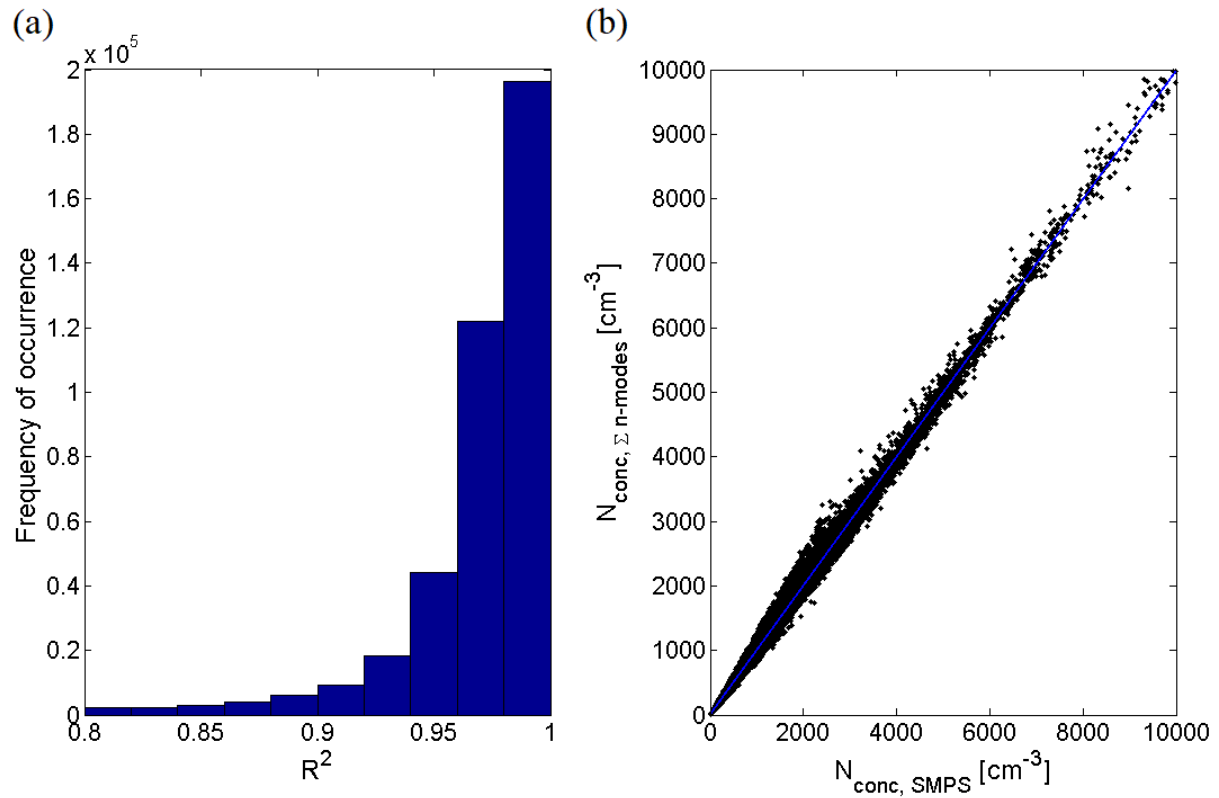


Figure S2. a) Histogram of the R^2 resulted from the multi-modal log-normal fits, considering only data with $R^2 > 0.8$. The average R^2 is 0.97. b) Linear fit of integrated $N_{\text{conc, SMPS}}$ and estimated $N_{\text{conc, } \Sigma \text{ n-modes}}$, with $R^2 = 0.997$.

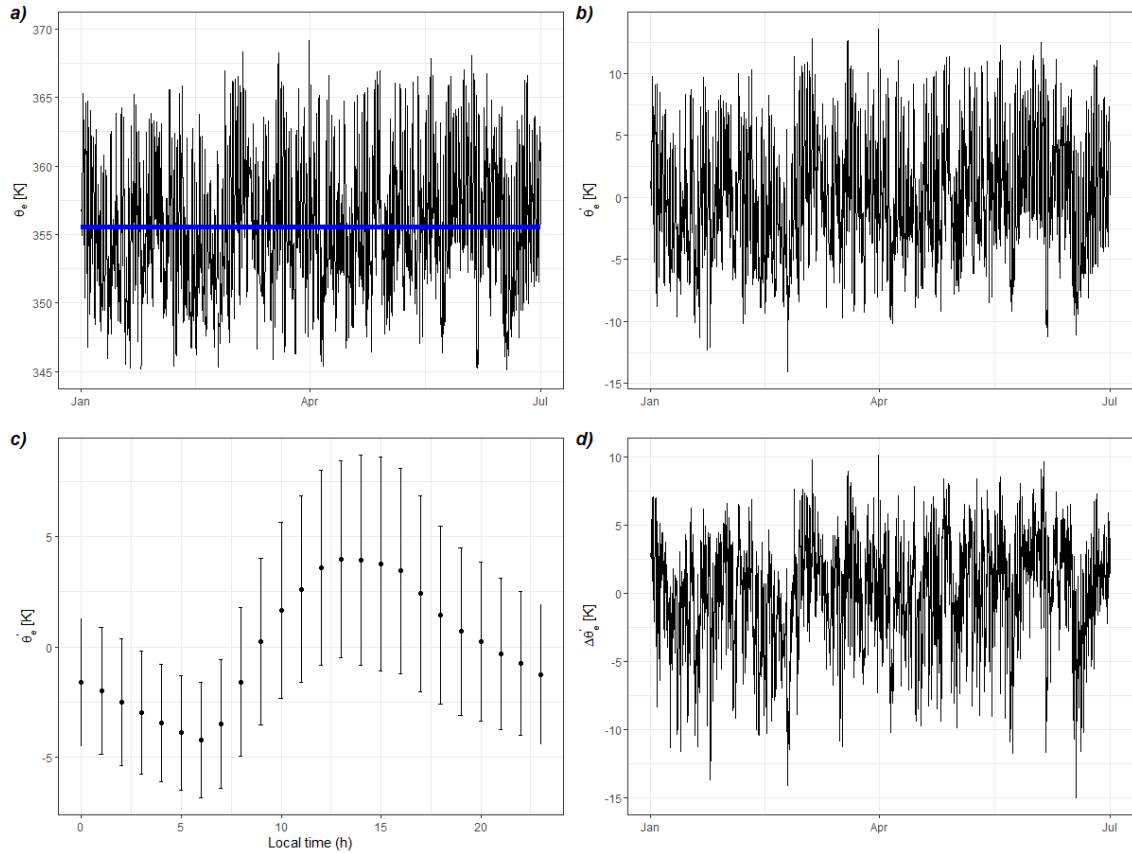


Figure S3. Illustration of the procedure to obtain the anomaly of the equivalent potential temperature ($\Delta\theta'_e$) at a particular season. For didactic purposes, it was selected the wet season of 2018. a) The mean seasonal θ_e (blue line) is obtained from the time series of θ_e . b) Time series of θ_e detrended by its seasonal mean (θ'_e). c) The mean diurnal cycle of θ'_e . d) Time series of $\Delta\theta'_e$, which represents the variations of θ_e at a specific time of the day at a particular season.

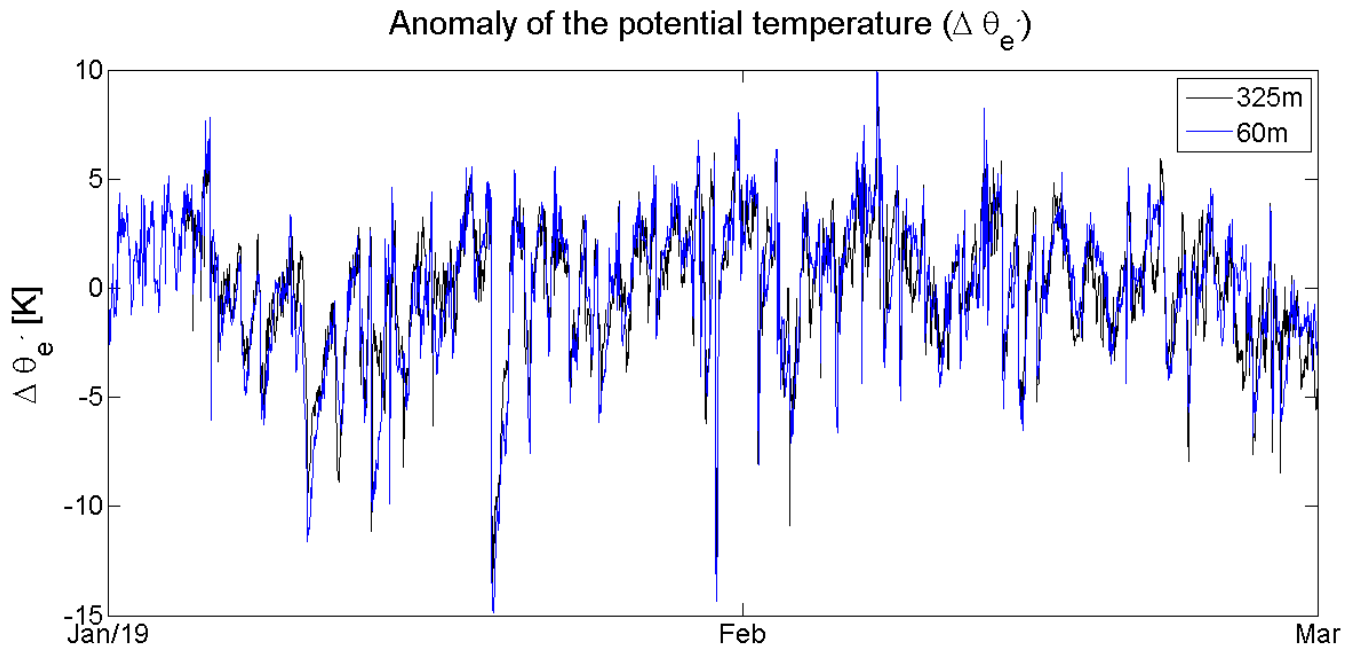


Figure S4. Time series of $\Delta \theta'_e$ calculated with meteorological measurements obtained simultaneously at ~ 60 (blue) and 325 m (black) high.

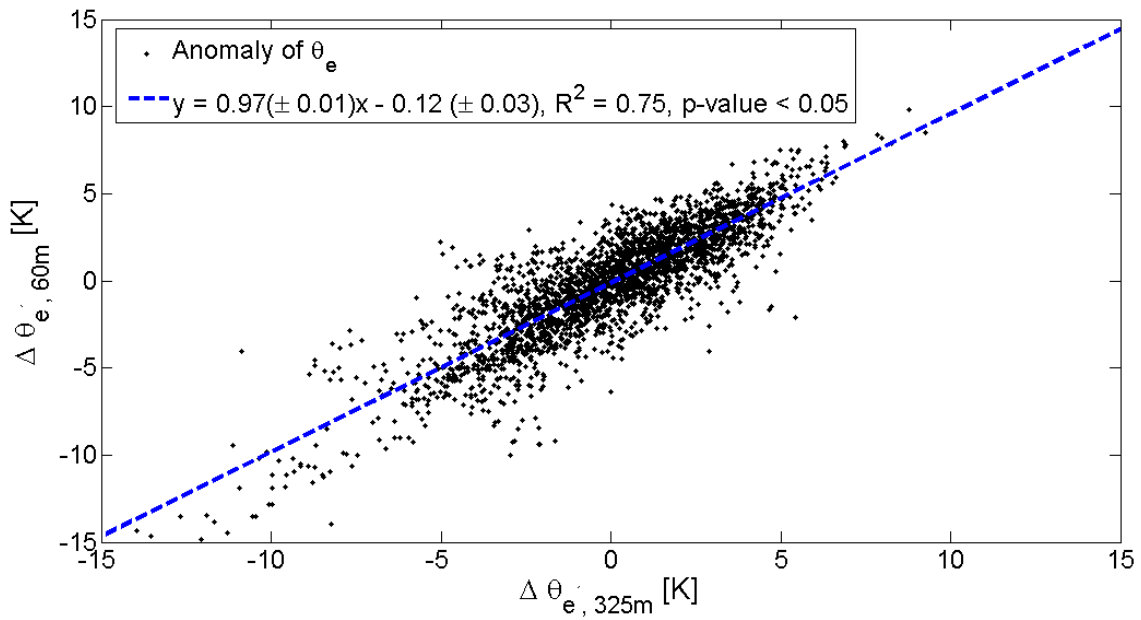


Figure S5. Correlation plot of $\Delta \theta'_e$ calculated with meteorological data obtained at ~ 60 and 325 m high. The blue line is the linear fit obtained from the data adjust.

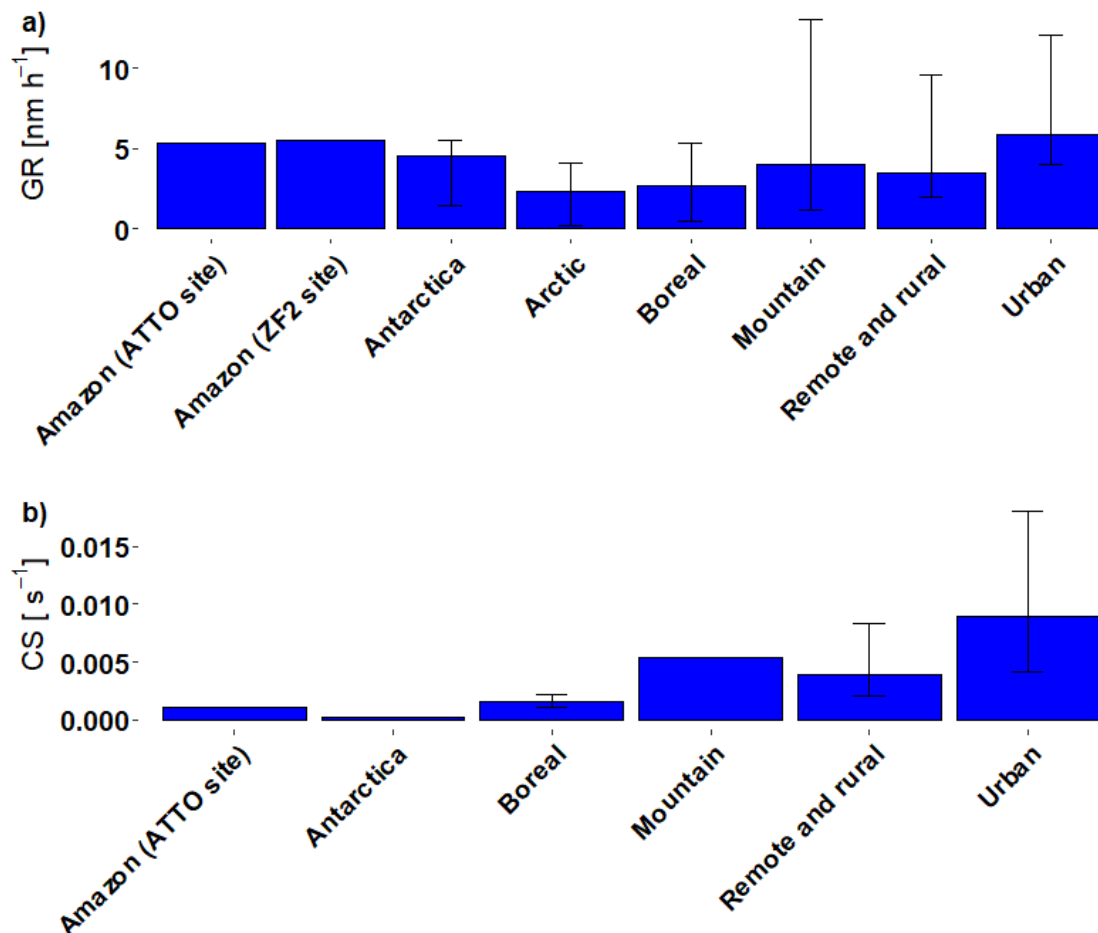


Figure S6. Comparative analysis of a) GR and b) CS at different site conditions. The error bars and the median data regarding the sites different from the Amazon sites denotes the 5th and 95th percentiles of the median GR and CS values obtained from different studies compiled by Kerminen et al. (2018) in its supplementary tables (available online at <https://iopscience.iop.org/article/10.1088/1748-9326/aadf3c/data>). For the Amazon sites, it was chosen to present only the medians of GR and CS, since the percentiles obtained in the studies refer to the different types of growth events analyzed, and not to different sites. In b), the missing sites did not present CS results in their respective articles.